PUBLIC NOTICE AND INFORMATION
CITY OF HOUSTON
DEPARTMENT OF PUBLIC WORKS AND ENGINEERING

I. GENERAL INFORMATION

The Standards Review Committee (SRC), Department of Public Works and Engineering (PWE) has been established to review, revise, and update PWE's Standards and Documents. Public input and participation is requested by the submittal of proposals for suggested changes, comments, recommendations and other information.

II. STANDARD DOCUMENTS TO BE REVIEWED

Standards and Documents that will be considered include stormwater drainage design standards and criteria, stormwater quality design requirements, associated technical specifications, and associated standard details and drawings. Exhibit 1 provides the type of document that will be reviewed. Exhibit 2 provides a description of existing standards that have been identified by PWE for review and potential revision. PWE's design standards can be referenced at http://www.publicworks.cityofhouston.gov/documents/index.htm . Other Standards and Documents will be reviewed at later times under separate notices.

III. PROCESS DESCRIPTION AND SCHEDULE

1. **Receive Proposed Changes:**
   The SRC will receive requests for changes submitted by public participants, categorize suggested changes and prepare the proposals for reviewing (information will be accessible through electronic media). Proposals may be submitted beginning March 1st through April 30th, 2007.

2. **Screen Proposed Changes/Formulate Agenda:**
   The SRC will review input received and prioritize issues according to PWE's mission; develop a short list of issues to

be considered in a formal discussion; publish an agenda for public review and input. This process will occur from May 1st to May 31st, 2007.

3. Convene/Conduct Discussions:
   The SRC will provide the opportunity for stakeholders of interest to address and provide input on proposals. This process will occur from June 1st to July 31st, 2007.

4. Evaluate Proposal/ Develop Recommendations:
   The SRC will consider all input and post a draft of revisions for comment. This process will occur from August 1st to September 30th, 2007.

5. Receive Comments:
   The SRC will receive and review all comments. Comments may be submitted from October 1st through December 31st, 2007.

6. Finalize Revisions:
   The SRC will process the information for final approval and publish the final update. Final revisions will be processed for final approval and published beginning January 1st through March 31st, 2008.

IV. FORMAT FOR REQUESTED CHANGES/REVISIONS

- Submittals should be made by e-mail to standardreviewcommittee@cityofhouston.net
  or by mail to:
  Standard Review Committee
  Office of the City Engineer
  611 Walker, 19th Floor
  Houston, TX 77002
  Submittals should comply with format provided in Exhibit 3.

- Identify the specific design parameter, specification, standard drawing, or other document that is proposed for change;

- State the deficiency in the existing standard;

- State the suggested or revised standard;

- State the benefit to the City and public achieved by implementing the proposed change;

- State the consequence of "no change" to the current standard.

Exhibit 1

STORM WATER

Documents for Review

I. INFRASTRUCTURE DESIGN MANUAL

Chapter 9	Stormwater Design Requirements	02-01-2005
Chapter 13	Stormwater Quality Design Requirements	10-01-2002

II. SPECIFICATIONS

DIVISION 2 – GENERAL REQUIREMENTS

01410	TPDES REQUIREMENTS (WITH ATTACHMENTS)	08-01-2003
01570	STORM WATER POLLUTION CONTROL	08-01-2003
01575	STABILIZED CONSTRUCTION EXIT	08-01-2003

DIVISION 2 – SITE WORK

02081	CAST-IN-PLACE CONCRETE MANHOLES	10-01-2002
02082	PRE-CAST CONCRETE MANHOLES	10-01-2002
02083	FIBERGLASS MANHOLES	10-01-2002
02084	FRAMES, GRATES, RINGS AND COVERS	10-01-2002
02086	ADJUSTING MANHOLES, INLETS AND VALVE BOXES TO GRADE	10-01-2002
02087	BRICK MANHOLE FOR STORM SEWERS	10-01-2002
02611	REINFORCED CONCRETE PIPE	10-01-2002
02612	PRE-CAST REINFORCED CONCRETE BOX SEWERS	10-01-2002
02631	STORM SEWERS	10-01-2002
02632	CAST-IN-PLACE INLETS, HEADWALLS AND WINGWALLS	10-01-2002
02633	PRE-CAST CONCRETE INLETS, HEADWALLS AND WINGWALLS	10-01-2002
02642	CORRUGATED METAL PIPE	10-01-2002
02643	STRUCTURAL PLATE CULVERT STRUCTURES	10-01-2002

III. STANDARD DETAILS

02081-01	STORM SEWER MANHOLE TYPE "C" FOR 42" DIAMETER RCP AND SMALLER	10-01-2002
02081-02	STORM SEWER MANHOLE TYPE "C" FOR 48" TO 72" DIAMETER RCP	10-01-2002
02081-03	STORM SEWER MANHOLE TYPE "C" FOR 78" DIAMETER RCP AND GREATER	10-01-2002
02081-04	STORM SEWER MANHOLE FOR PROPOSED CONCRETE BOX SEWER	10-01-2002
02081-05	STORM SEWER MANHOLE TYPE "E" FOR EXISTING MONOLITHIC REINFORCED CONCRETE SEWERS 48" DIAMETER AND GREATER	10-01-2002
02081-06	STORM SEWER JUNCTION BOX WITH LID OR GRATE TOP FOR A MAXIMUM OF 24" DIAMETER STORM SEWER	10-01-2002
02081-07	LATERAL CONNECTION TO EXISTING MONOLITHIC REINFORCED CONCRETE STORM SEWER	10-01-2002
02081-08	PROPOSED MANHOLE ON EXISTING BOX STORM SEWER	10-01-2002

02084-05	STORM SEWER GRATE INLET DOUBLE ASSEMBLY	10-01-2002
02084-06	STORM SEWER TYPE "D" INLET GRATE AND FRAME	10-01-2002
02084-07	STORM SEWER TYPE "D-1" INLET GRATE AND FRAME	10-01-2002
02084-08	STORM SEWER TYPE "A" INLET GRATE AND FRAME	10-01-2002
02084-09	STORM SEWER TYPE "C-1", "C-2" AND "C-2A" INLET FRAME AND COVER	10-01-2002
02084-10	32" INVERTED MANHOLE FRAME	10-01-2002
02084-11	STORM SEWER RING GRATE FOR OPEN END OF 18" TO 72" RCP STUBS TO DITCH	10-01-2002
02317-02	SANITARY OR STORM SEWER CRUSHED STONE FOUNDATION FOR WET STABLE TRENCH	10-01-2002
02317-03	SANITARY OR STORM SEWER BEDDING AND BACKFILL FOR DRY STABLE TRENCH	10-01-2002
02317-05	PRECAST CONCRETE BOX STORM SEWER BEDDING AND BACKFILL FOR DRY STABLE TRENCH	10-01-2002
02317-06	PRECAST CONCRETE BOX STORM SEWER BEDDING AND BACKFILL FOR WET STABLE TRENCH	10-01-2002
02317-07	PRECAST CONCRETE BOX STORM SEWER BEDDING AND BACKFILL WITH SEAL SLAB	10-01-2002
02632-01	STORM SEWER TYPE "A" GRATE INLET	10-01-2002
02632-02	STORM SEWER TYPE "B" INLET WITH GRATE TOP	10-01-2002
02632-03	STORM SEWER TYPE "B" INLET RELOCATION	10-01-2002
02632-04	STORM SEWER TYPE "BB" INLET	10-01-2002
02632-05	STORM SEWER TYPE "BB" INLET RELOCATION	10-01-2002
02632-06	STORM SEWER TYPE "C-1", "C-2" AND "C-2A" INLETS	10-01-2002
02632-07	STORM SEWER TYPE "D" INLET	10-01-2002
02632-08	STORM SEWER TYPE "D-1" INLET	10-01-2002
02632-09	STORM SEWER TYPE "E" INLET	10-01-2002
02632-10	STORM SEWER TYPE "E" INLET ON EXISTING MONOLITHIC CONCRETE STORM SEWERS OF 48" DIAMETER AND GREATER	10-01-2002
02632-12	CONCRETE HEADWALLS WITH PARALLEL WINGS	10-01-2002
02632-13	CONCRETE HEADWALLS WITH FLARED WINGS	10-01-2002
02633-01	STORM SEWER PRECAST TYPE "H-2" INLET	10-01-2002
02633-02	STORM SEWER PRECAST TYPE "H-2" INLET FOR CURBED STREET PAVEMENT	10-01-2002

EXHIBIT 2
INFRASTRUCTURE DESIGN MANUAL, CHAPTER'S 9 AND 13

CHAPTER 9 – STORMWATER DESIGN REQUIREMENTS

1. Calculation of Time of Concentration

The City's standards require the use of the HouStorm software for design analysis for CIP projects and for projects that receive city funding. HouStorm software calculates the time of concentration based on topographic conditions and flow velocity. An alternative method for the calculation for time of concentration is currently accepted for private projects. The alternative method is not consistent with the HouStorm software nor with recommended practices from professional societies through manuals of engineering practice. The suggested revision is to use the HouStorm methodology for all projects.

2. Variable Design Storm based on Street Classification

The City currently has one design standard that is applicable to all classifications of streets. Current criteria require runoff from the 2-year storm event to be carried in the storm sewer pipe, and runoff that exceeds the 2-year event up to the 100-year event to be conveyed overland, primarily in the street. The City's streets have multiple use functions – local residential access, access to emergency service centers, mobility purposes, evacuation routes, and other designations. Discussion of a variable design standard based on classification of roadway use is suggested.

3. Detention

Single Family Residential Tracts

Eliminate the existing exemption from detention for single family homes on lots of 15,000 square feet or less.

Redevelopment Project – Detention Volume Based on Increased Impervious Area

The following information applies to sites where the initial development of the site occurred prior to the City's adoption of detention requirements (i.e.; site does not have detention). Current standards provide calculation of detention volume based on increased impervious area. For redevelopment of the site, typically there is little or zero increased impervious area. Although the design standards have been revised since construction of the original project (when detention was not required), the redevelopment project is exempted from detention since there is not an increase in impervious area. The suggested revision is to base the detention calculation on impervious area for all projects.

4. Fill

Current standards require a grading permit when the depth of fill exceeds one foot. Current standards do not specify a maximum height of fill that can be placed on property adjacent to existing homes or existing development. Residents adjacent to the property that is being elevated express concerns due to runoff to their property, visual line of sight from the elevated property to their previously private back yard area, and aesthetic and

visual appearance. It is suggested that guidelines for maximum fill placement be considered.

5. Low Impact Development Methods (LID)

PWE is currently working with the Houston Council of Engineering Companies (HCEC) to review the following LID methods for application to drainage standards:

Porous Pavement
Vegetative Swales
Infiltration Trenches
Hard Roof (storage)
Green Roof
Bioretention
Rain Barrels

A working committee has been formed to describe each LID technique, prepare design criteria, define maintenance requirements, and consider policy and administrative requirements. The objective is to develop design standards and criteria for each technique as a supplement to conventional design standards.

6. IDF (Intensity, Duration, Frequency) Curves

The City of Houston IDF Curves, Figure 9.1 of the design manual, are derived from National Weather Service publications. The IDF curves should be reviewed and updated to confirm data is consistent with current climatological data gathered by the National Weather Service, rainfall data used by Harris County Flood Control District (HCFCD) for preparation of the Preliminary FIRM (TSARP) maps, climatological data used by TxDOT for projects in Harris County, and climatological data used by the Harris County Public Infrastructure Department. A single set of climatological data for storm drainage analysis in Harris County is desirable.

CHAPTER 13 – STORMWATER QUALITY DESIGN REQUIREMENTS

1. Definition of Significant Redevelopment

Current stormwater quality standards apply to new development (development of an undeveloped parcel) and "significant redevelopment". "Significant redevelopment" is defined to mean "changes of one acre or more to the impervious surface on a five acre or larger developed parcel." The urban area of the City (the area within the IH610 Loop) is experiencing consistent redevelopment. However, the typical redevelopment project has less than one acre change (increase or decrease) of impervious surface. Consequently, the project is exempt from current stormwater quality regulations, while stormwater quality standards are primarily allocated to undeveloped parcels of land. Consideration of revisions to standards to require uniform application for both new development and redevelopment is suggested.

2. BMP Standards

The City's current standards require retention of the rainfall first flush in a stormwater quality pond for sedimentation prior to discharge. Citizens and HOA's have expressed concern over ponds that do not drain adequately, continuously wet bottoms, potential mosquito reproduction, weed growth that cannot be maintained due to unstable bottom conditions, and weed growth conducive to snake and varmint habitat. Consideration of revisions to design details to improve maintainability is suggested.

3. Low Impact Development Methods

PWE is currently working with the Houston Council of Engineering Companies (HCEC) to review the following LID methods for application to stormwater quality standards:

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Hard Roof (storage)
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Rain Barrels

A working committee has been formed to describe each LID technique, prepare design criteria, define maintenance requirements, and consider policy and administrative requirements. The objective is to develop design standards and criteria for each technique as a supplement and or alternative to conventional design standards.

4. Fee Structure to Support Services

Fees for stormwater quality services are $300 for the original permit (effective duration of 1 year), and $150 for annual permit renewal. The fee structure does not support the staff required to administer the program – review stormwater quality plans, issue permits, inspect stormwater quality features, and inspect construction best management practices. Consideration of a fee structure to support the required program services is suggested.

CITY OF HOUSTON
Public Works and Engineering Department

Request for Proposed Revision to City of Houston Standards

Return Address ☒ 611 Walker, 19th Floor, Houston, Texas 77002

Fill in all blanks in this section.

To: *City Engineer's Office*	**Date**
Attn: Rajiv Arya	
From:	
Phone:	

ACTION REQUESTED:

***A. Reference Document*:**

- ☐ Standard Specification
- ☐ Guide Specification
- ☐ Design Guideline/Manual
- ☐ Standard Detail

Attachment Included ☐ **Yes** ☐ **No**

Section No./Title _____

Paragraph Ref: _____

Drawing No: _____

Drawing Title: _____

Guideline/Manual Title: _____

Paragraph Ref: _____

B. Deficiency in existing document:

C. Proposed Revisions:

D. Benefit to the City and Public by Implementing the Proposed Revisions:

E. Possible Impact to other documents (list title and document number if applicable):

F. Consequence of No-Changes: